

Necrotizing fasciitis

Disease Fact Sheet Series

What is necrotizing fasciitis?

Necrotizing fasciitis is a serious condition in which muscle and fat tissue are broken down as a consequence of infection. Necrotizing fasciitis is a complication of severe group A streptococcal infection (GAS)(*Streptococci pyogenes*). Additional complications can occur from necrotizing fasciitis such as shock and organ failure.

How common is necrotizing fasciitis?

Based on surveillance data from the Centers for Disease Control and Prevention (CDC), it is estimated that necrotizing fasciitis causes 10,000-15,000 infections each year in the United States, resulting in 2,000-3,000 deaths. Intensive surveillance efforts for necrotizing fasciitis in the United States have not been conducted since 1991.

Persons of all ages may be infected although most disease occurs in adults. Necrotizing fasciitis often begins at the site of a break in the skin (e.g., a surgical or non-surgical wound). In children, rare cases occur as complications of chickenpox.

How does necrotizing fasciitis occur?

Both the organism and the patient susceptibility likely play a role in the development of the infection. While most group A streptococci cause only mild infections (e.g., "strep throat") some types may cause more severe disease. One factor that may be linked to the development of necrotizing fasciitis is the production of proteases (enzymes that break down proteins) by some group A streptococci. Susceptibility of the individual is also important. Investigation of family clusters has shown that the same type of bacteria can cause severe illness in one family member and only mild or no illness in others.

How does necrotizing fasciitis cause death?

Persons with necrotizing fasciitis are likely to develop spread and growth of the bacteria in other areas of their body, including the bloodstream. When this growth continues it can lead to overwhelming bacterial infection and death.

Can I prevent necrotizing fasciitis infection?

Necrotizing fasciitis often occurs in persons with wounds due to surgery or injury that become infected. Persons with such wounds should take appropriate precautions to keep wounds clean and should seek medical attention if signs of infection occur (redness, swelling, area warm to the touch, pus). The infection can be treated with antibiotics.

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The spread of all types of GAS infection can be reduced by thorough handwashing, especially after coughing, sneezing, after caring for persons with wounds or "strep throat," before preparing foods and before eating.

Should contacts of patients with invasive group A streptococcal infection be tested and treated?

There have been no reports of casual contacts (e.g., co-workers or classmates) developing invasive GAS disease after being in contact with a person that had invasive GAS disease. Occasionally very close and frequent contacts (e.g., household family members) of patients with severe invasive GAS disease have developed the illness.

Thus, although studies are limited, current recommendations suggest that very close and frequent contacts of individuals with necrotizing fasciitis or severe invasive GAS disease (including Streptococcal Toxic Shock Syndrome) should be tested. This includes household members and those in direct contact with nasal and throat secretions. Cultures of the throat and any skin lesions are recommended. If cultures of contacts are positive, they should receive antibiotic treatment prescribed by a physician. If contacts have symptoms of GAS disease or would be at high risk if developing invasive disease if infected (due to an underlying illness or weakened immune system), therapy may be started empirically while waiting for test results. Casual contacts do not need to be screened or treated.

What infection control practices should be followed in the institutional setting?

Health care personnel in hospitals, nursing homes, or other institutional settings should strictly adhere to contact precautions such as changing gloves between patients, thorough and frequent handwashing, and proper disposal of items contaminated by respiratory secretions or wound drainage. There is no evidence that respiratory isolation is necessary. In general, health care workers with symptoms of respiratory illness or wound infections should avoid patient care until symptoms have resolved.